

# PRENATAL EXPOSURE TO MERCURY AND COGNITIVE AND PSYCHOMOTOR DEVELOPMENT AT FIRST YEAR OF LIFE

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**Background and Aims:** Mercury is a ubiquitous pollutant that is known to be neurotoxic to humans. Vulnerability of the central nervous system to these substances is increased during early development, especially during the prenatal period. Early mother-child cohort studies have reported evidence about deleterious effect of prenatal exposure to mercury, but others did not find it. The purpose of the current study is to assess whether prenatal Hg exposure may affect negatively both mental and psychomotor development among infants in a large population-based cohort study with moderate-high fish consumption.

**Methods:** Study subjects (n=1683) were participants in the INMA (Environment and childhood) Project, a multicenter cohort study from four areas of Spain (Valencia, Sabadell, Asturias and Gipuzkoa). Cord blood total mercury (T-Hg) was analyzed by atomic absorption spectrometry. Neurodevelopment of the children was assessed around age 14 months using the Bayley Scales of Infant Development. Covariates were obtained through questionnaire.

**Results:** Geometric mean of cord blood T-Hg was 8.4 µg/L (95%IC: 8.1, 8.7). At the multivariate analysis, including maternal fish consumption, T-Hg did not show an association with mental or psychomotor development delay. An interaction between sex and T-Hg was observed, with a negative association with psychomotor scores in girls (p=0.06) but not in boys.

**Conclusions:** Overall, prenatal exposure to mercury was not associated with mental or psychomotor development delay at the first year of life. Observed gender differences need to be confirmed by further studies.

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